



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

September 29, 1997

Mr. Chris Anaya  
4360 Cothrin Ranch Road  
Shingle Spring, CA 95682

Dear Mr Anaya,

Thank you for contacting me with your questions on perchlorate. I have enclosed a 1995 EPA review of the research leading to the provisional reference dose range of .0001 to .0005 mg/kg/day (Milligrams per kilogram of body weight per day). The conventional way to convert these values to a concentration in drinking water is to assume that a 70 kilogram adult (154 pounds) consumes 2 liters of water (about half a gallon) each day. The values convert to 3.5 (rounded to 4) to 17.5 (rounded to 18) micrograms per liter of water, or 4 to 18 parts per billion.

To calculate the intake for a person with different weight and daily water consumption, multiply the daily water consumption in liters (1 gallon= 3.785 liters) by the concentration of perchlorate (in parts per billion, or ppb) and divide this number by body weight in kilograms (1 pound = 0.45 kg). The number will be in micrograms/kg/day. To convert to milligrams/kg/day for comparison with the provisional reference dose range, divide the number calculated by 1,000.

So if a 220 pound person (100 kg) drank 2 gallons of water (7.5 liters) each day, and the water contained 10 ppb of perchlorate, the intake would be .00075 mg/kg/day. (10 micrograms per liter multiplied by 7.5 liters per day, divided by 100 kilograms to reach 0.75 micrograms/kg/day. Then divide by 1,000 to convert to milligrams/kg/day).

Remember that the provisional reference dose range does incorporate an uncertainty factor (or safety factor) to protect people who may more sensitive or at greater risk for various reasons.

I am also enclosing a letter about a meeting on perchlorate on Friday, October 3, which I have been told is open to the public.

Please feel free to contact me at (415) 744-2248 if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Kevin".

Kevin P. Mayer, SFD-7  
Acting Associate Chief,  
Superfund Site Cleanup Branch